Technical Note

AECOM

Project:	**Network Rail Capacity Charge**	Job No:	**N/A**
Subject:	**Consultation Response**		
Prepared by:	**Simon Shapiro**	Date:	**29 August 2012**
Checked by:	**Helen Page**	Date:	**03 September 2012**

1. Do you agree that, beyond the arrangements that are currently in place, capacity charge tariffs that vary across time should not be introduced?

We agree that a differential between weekdays and weekends should be maintained. Whilst a differential between peak and off-peak periods would be a good method of incentivising efficient use of the network, we recognise that it could result in considerable timetable anomalies and would require fairly complex administration. We also suspect that some geographic variation would be required, as the off-peak service provision is similar to peak levels on some parts of the network and relatively sparse in other areas.

2. Do you agree that the weekend discount should remain in place? Do you agree that the magnitude of the discount should be revisited, and informed by analysis undertaken as part of the capacity charge recalibration exercise?

As noted in the response to Question 1, we agree that the weekend discount should remain in place. We also agree that the level of the discount should be reviewed. However, it may also be appropriate to introduce geographic variation into the level of discount, reflecting the different levels of weekend usage on different parts of the network.

3. Do you agree that the capacity charge should be disaggregated to service code (rather than service group) level in CP5?

It appears from the consultation document that the calculation of capacity charge at service code level would not significantly increase the administrative requirements, but would introduce considerable flexibility. There is of course, no reason why some service codes cannot then be combined for the purpose of capacity charge calculation where data at an individual level would otherwise be unreliable or unmanageable. Therefore, we support this change.

4. What are your views on developing a tool to calculate capacity charge tariffs for new or amended service codes? How could this be best accommodated contractually?

We agree that a tool would be required to calculate capacity charge tariffs for new or amended service codes. This could operate by assembling data at a very granular level, combined with timetable information, to calculate capacity charges for each service code. This would also enable:

- calculation of appropriate discounts for weekends (Question 2);
- calculation of appropriate tariffs for freight (Question 5); and
- calculation of amendments to the tariff (Question 4 and Question 7).

However, a fully automated tool which could handle many future amendments to timetables, service codes and infrastructure would be a complicated product, and a more simple spreadsheet-based solution may be possible with less functionality.

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It will be important for Network Rail to agree the scope of the tool with consultants at the outset of the bidding process.

5. Do you agree that all freight operators should pay the same single capacity charge tariff in CP5? What are your views on the level of the discount applied to freight services?

Whilst we recognise Network Rail's point of view, we believe there is scope to vary the freight capacity charges geographically, reflecting the demand for train paths and the conflict between passenger and freight demand on different parts of the network. We would, however, support discounting the capacity charge due to the level of flex applied by Network Rail to freight trains both in timetable planning and operational management of the network.

6. Do you agree with Network Rail's proposals in relation to the de minimis threshold?

We agree with the concept of 'waiving' the capacity charge where it would be below a defined threshold. In addition to reducing the administrative burden, this would maximise the incentive to operate services where capacity is available.

7. What are your views in relation to arrangements for handling large timetable changes in CP5?

The tool for change management discussed in the response to Question 4 could potentially be expanded to accommodate large timetable changes.

8. Do you consider that the proposed methodology for recalibration of the capacity charge described above and detailed in Appendix 2 is appropriate?

Retaining a similar methodology for calculating the capacity charge as applied previously will obviously retain the advantages and disadvantages of the existing arrangements.

An advantage of the present methodology is that the charge is found by an objective set of mathematical calculations. Once the form of the calculation is agreed in principle, the processing of the data to arrive at an answer does not require judgment or debate. However, a significant disadvantage is that the calculation requires a great deal of input data and considerable processing of the data to arrive at a result. The calculation is not particularly transparent in that it is not always obvious how the inputs relate to the final tariff. Network Rail must therefore consider the relative strengths of these and other advantages and disadvantages.

One fairly minor point on the existing methodology is that Step 4 of Appendix 2 describes the calculation of the financial (Schedule 8) impact of the marginal service. This step represents a significant piece of work in its own right, especially as the procedure involves converting data by service group to geographic section then aggregating to service code. If it is known that the capacity charge is only to be applied by service group or service code, then we suggest considering whether a more simple methodology can be applied.

9. Do you agree that the CUI should be used as the basis for capacity charge recalibration as part of PR13?

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In theory, we support the use of CUI, for the reasons given by Network Rail. However, we would need to establish ownership of the CUI calculation process, and whether up-to-date calculations have been maintained.

At the outset of the bidding process, it will be necessary to establish whether Network Rail or Delta Rail will be providing consultants with up-to-date CUI values, or whether consultants will be expected to develop and implement a new process.

10. What are your views about accounting for other determinants of reactionary delay as part of the CP5 recalibration of the capacity charge?

We understand Network Rail's desire to incorporate infrastructure constraints and other similar factors in the capacity charge calculation, and support this concept in principle. However, in view of the timescale, the calculation would need to be at a relatively 'high level', possibly incorporating generic adjustment factors, rather than attempting to model each element in detail.

11. What are your views about the functional form used to model the relationship between reactionary delay and capacity utilisation?

As with Question 10, we would be happy to revisit the functional form, but would need to be realistic about the expected outcome.

In previous work for Network Rail, we have considered:

- different functional forms;
- different subsets of reactionary delay; and
- various alternative explanatory variables.

Overall, we have discovered that there is no neat formulaic solution to fully explain reactionary delay. Indeed, the consultation document mentions that the data include a large amount of statistical 'noise'. To illustrate this point, the chart below shows the relationship between CRRD and CUI for the 16 geographic sections on the southern section of the East Coast Main Line, based on the data used in the original calculation of the capacity charge.

Each geographic section has three data points (morning peak, off-peak and evening peak). It can be seen that the reality of the data is quite different to the theoretical calculation illustrated in Figure 2 of the consultation document. Essentially, there are only three data points available for each curve, which do not always conform to increasing CRRD with increasing CUI.

Whilst it would be good practice to consider other data sources available, our previous work has shown that other data are of a similar quality, and we would therefore not expect the results to be more accurate.

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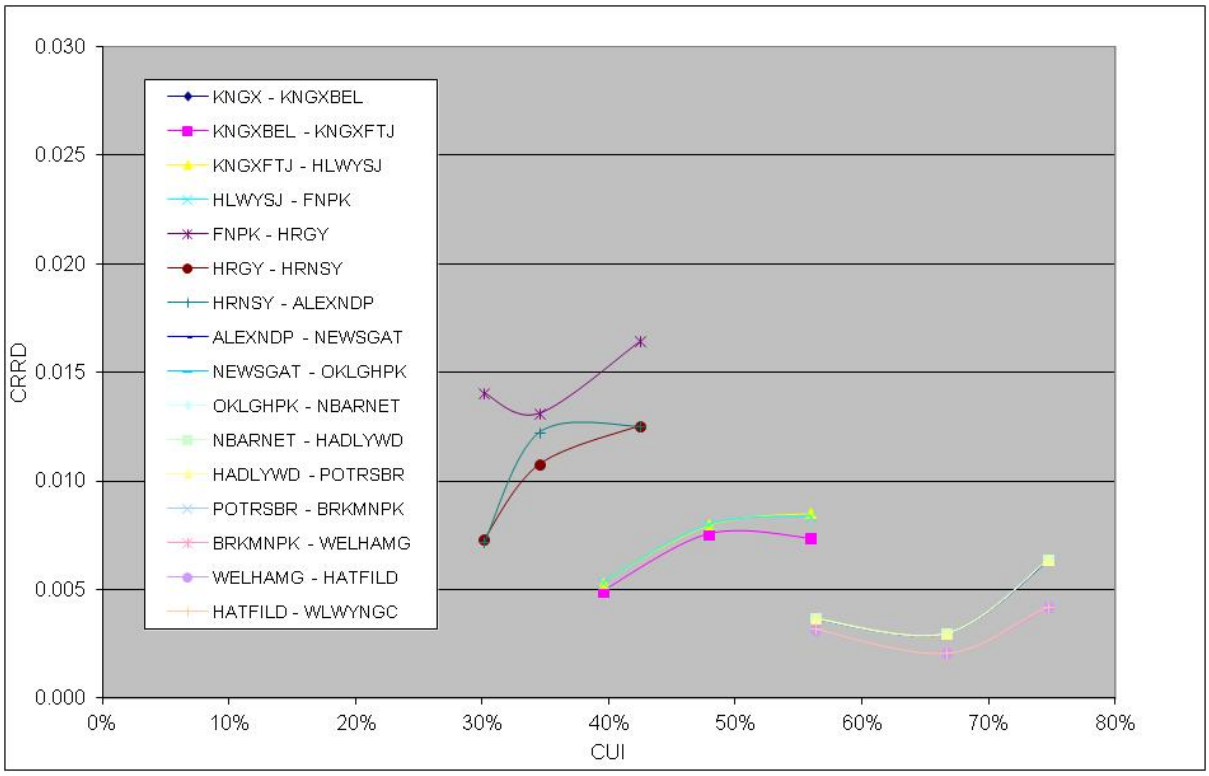

12. How do you think the industry can guard against analytical risk in the capacity charge recalibration? In the unlikely event that statistical recalibration approach described above is not fully successful, how should we proceed to secure a capacity charge which is fit for purpose in CP5?

Realistically, it will be difficult to guard against analytical risk. However, a major advantage of the methodology is that the capacity charge is calculated from a mathematical formula. Thus, after the methodology has been agreed and implemented, it should be followed with few exceptions, rather than frequently resorting to a contingency approach.

Indeed, rather than define a contingency plan at this stage, the recalibration should progress, and detailed analysis undertaken to understand the underlying causes in areas where the recalibration is not successful. An appropriate solution can then be defined for the exceptional cases. For example, previous experience demonstrated that the cases where a statistical solution was not possible were in geographic areas with low CUIs throughout the day. Therefore, low capacity charges were defined for the appropriate sections.

13. How should changes in the capacity charge between CP4 and CP5 be managed?

Firstly, it must be emphasised that the recalculations carried out as part of the CP4 review were not used in specification of the CP4 capacity charge. Consequently, the capacity charge has effectively not been updated since its inception, and some significant changes could now be expected. For example, the chart below presents the results of the CP4 calculation corresponding with the chart illustrated in the response to Question 11.

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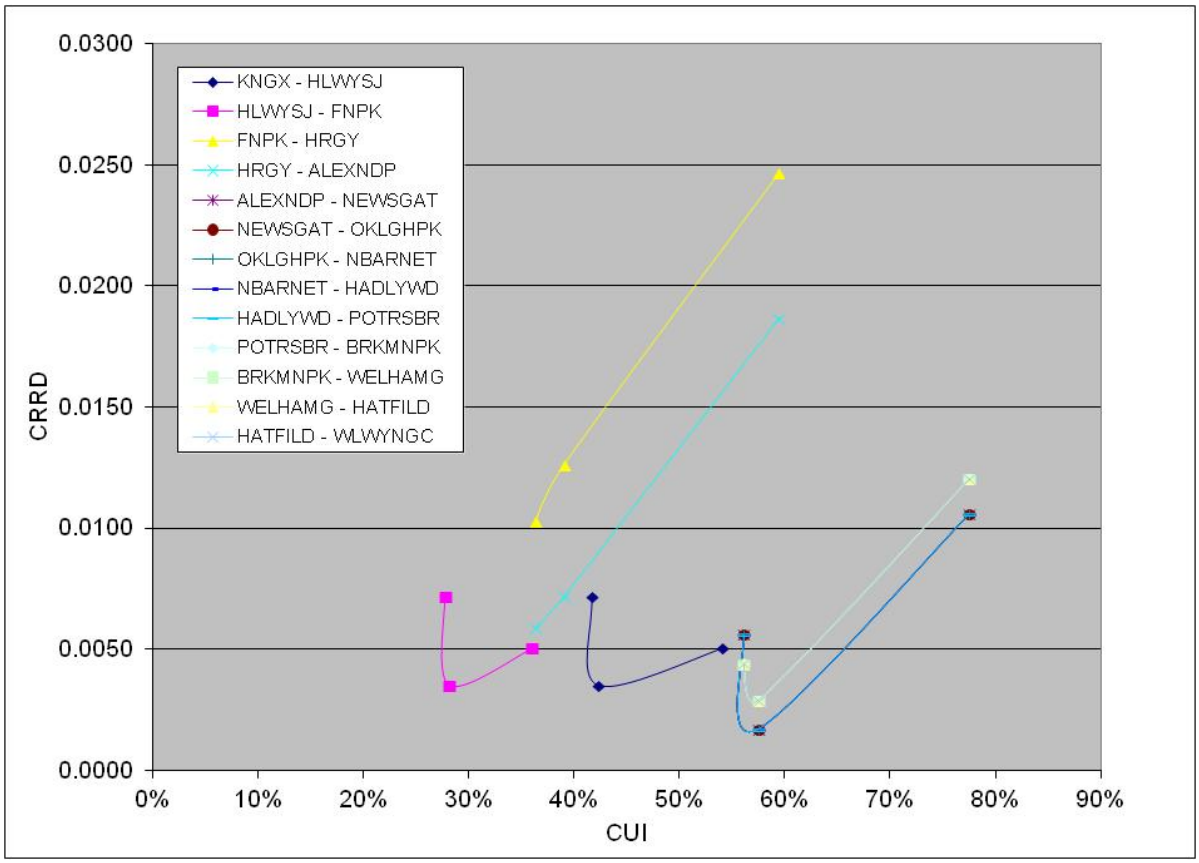

Although the geographic sections are not the same in the two charts, it is clear that the two datasets are significantly different. Various attempts were made to explain the changes between the original and revised calculations, but these proved extremely difficult, partly due to the complexity of the calculation, but also because it is not always possible to explain changes in the raw data (in particular the CRRD).

Likewise, it could be difficult to explain the changes which will inevitably occur as part of the next recalibration, and we do not feel that such explanations should be part of the remit. Indeed, the work involved in retrieving some of the original data and revisiting the calculations could be a significant distraction. Rather, we believe that emphasis should be on managing the expectations of the train operators, and providing them with confidence in the revised calculations.

14. Do you support the creation of a capacity charge working group? How do you consider that its membership should be decided? What should be its remit?

We support the creation of a capacity charge working group, with the most important objective being to manage expectations and minimise 'surprises' when results of the recalibration are published. The train operators and ORR will clearly be the most important members. However, some legal representation would also be useful to prepare for any disputes which might arise between Network Rail and the stakeholders.

15. Do you have any further views or suggestions about our approach to stakeholder engagement in relation to the capacity charge?

At this stage, we do not have further views or suggestions.

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16. Do you prefer fewer and longer consultations or more regular and shorter consultation?

Provided there is a reasonable amount of time for stakeholders to respond, especially during holiday periods, shorter more regular consultations are generally better. This allows the consultation topics to be more focused, building on the outcome from previous consultations, rather than covering a wide variety of inter-related issues such that respondents feel the scenarios are more theoretical than realistic.

17. Do you have any further views or suggestions about our approach to stakeholder engagement in general?

At this stage, we do not have further views or suggestions.

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